4th Asian Academic Society International Conference (AASIC) 2016

Globalizing Asia: Integrating Science, Technology and Humanities for Future Growth and Development

HEA-OR-101

KANGAROO MOTHER CARE MODULE AND EDUCATION TOWARD THE BABY GROWTH AND MOTHER INDEPENDENCY AT HOME

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Follow up care of Low Birth Weight (LBW) importantly depend on mother after discharge from hospital who is going to look after her baby. It is significant to give mother education and guide us follow up care that determined health status of LBW. Study showed that home based neonatal care can reduce neonatal morbidity up to half. A non-equivalent experimental design with pre and post-test and control group was employed in this study to determine the infant weight and score of mother independency one week and one month after leave hospital. Twenty five mothers who just had delivery a 1,500-to-2,500-grams baby with no congenital abnormalities were recruited by accidental sampling technique both in experimental and control group during April - June 2015 in Ambarawa and Ungaran Hospital. Either control or experimental group received "Kangaroo" clothes that positioned the baby in a pocket at the front side of the mother during breastfeeding, and taught the benefits and how to use the outfits. However, only the respondents in experimental group obtained Kangaroo Mother Care module and education including the introduction of KMC, the benefits of KMC, and breast feeding in 3 days before leave the hospitals. The data suggest the uses of Kangaroo outfit are recommended to support significant growth of infants and score of mother independency after one month leave the hospitals; however, accompanying the outfit with KMC module and education will be the best option.

Keywords: Kangaroo Care Method, KMC Module and Education, Infant Growth, Mother Independency

1. INTRODUCTION

LBW is the infant weight less than 2,500 gr without consideration to gestational age and resulted with high risk to infant mortality and morbidity, especially in the perinatal period (MoH RI, 2009). LBW births determine the quality of future generations caused of low growth, development, and intelligence (MoH RI, 2009). LBW births often face various problems, among others, asphyxia, hypothermia, drinking disorders, jaundice and respiratory problems.

From Basic Health Survey data in 2013 the LBW prevalence in Indonesia was 10.2% and the majority of infant was birth with weight less than 2,000 gr, and died in the neonatal period. According to data from Indonesian Demographic Health Survey (IDHS) in 2012 the infant mortality rate (IMR) in Indonesia is still high at 32 per 1,000 live births. This figure is still far from the MDGs target of 23 per 1,000 live births. In Semarang regency, IMR in 2013 amounted to 11.95 per 1000 live births, and the major causes of infant mortality was LBW with 62 cases, compare to asphyxia at 25 cases.

Premature babies with LBW tend to experience hypothermia because the thin sub cutan is easily influenced by the environment (Flacking et al 2011). As the solution, the premature infants should be placed in an incubator, and separate the baby with the mother. However, through Kangaroo Mother Care (KMC) the mother can accompany the baby by placed them in a Kangaroo outfit which allow skin-to-skin contact between mother and the infant. Various studies indicated that KMC was effective in controlling body temperature, breastfeeding, maternal closeness with the baby, weight gain and clinical improvement in infants (WHO, 2008). However, many factors affect the KMC implementation in community including culture, the level of knowledge, and health services policy. In this study, we not only determine the contribution of KMC to the baby's growth, but also measure mother independency while implemented KMC at home. Mother independency views from the mother's ability to take care of the baby without the help of others, it can be in research in India that "home based neonatal care" can reduce neonatal morbidity up to half (Bang et al 2005).

2. RESEARCH METHODOLOGHY

2.1. Design and samples

This study employed non-equivalent experimental design with pre and post-test and control group. Twenty five mothers who just had delivery a 1,500-to-2,500-grams baby with no congenital abnormalities were recruited by accidental sampling technique both in experimental and control group during April - June 2015 in Ambarawa and Ungaran Hospital.

The respondents in the experimental group obtained Kangaroo Mother Care module and education in 3 days before leave the hospitals, including the introduction of KMC, the benefits of KMC, and breast feeding. The respondents obtained necessary modules which related to KMC including the methods and the advantages. The experimental group obtained education related to baby alarm and the LBW including the risks and problems. Either control or experimental group received "Kangaroo" clothes that positioned the baby in a pocket at the front side of the mother during breastfeeding, and taught the benefits and how to use the outfits. Independent mother showed by ability to perform KMC at home without any assistant of health provider and continuity doing KMC.

2.2. Measurement

Baby weight (in grams) and mother independency were assessed 1 week and 1 month after leave hospital. Digital baby scales used to measure the growth of the baby during the first month of discharge from the hospital with a number of grams. A questionnaire which provides 11 yes-and-no questions was given to the participants to measure mother independency with a score of 2 for yes answer, and a score of 1 if not. The high score represents the more independent a mother.

2.3. Data Analysis

Data characteristics observed in this study include the baby's gender, type of birth and infant gestational age (weeks). The observed data including the average weight gain of infants and mother independency was analyzed the mean difference by dependent t test (independency mother variable) and non-parametric mann whitney and wilcoxon test (baby weight variable) after performed the normality using one sample Shapiro-Wilk test.

3. RESULTS AND DISCUSSIONS

3.1. Characteristics of the infants

As shown in Table 1, most babies involved in this study were female. The majority of infants were birth normally, even though met our criteria for LBW less than 2,500 grams. We can recognize that the majority of infants weighted less than 2,500 grams were birth premature at the gestational age less than 37 weeks. Birth occurs in about 28-36 weeks gestation, called preterm labor or premature (Varney, 2007).

Table 1. Characteristics of the infants (N=30)

Characteristics	Treatment		Control	
	F	%	F	%
Baby's gender				
Male	11	44	9	36
Female	14	56	16	64
Type of birth				
Spontaneous	20	80	21	84
Sectio Caesaria	5	20	4	16
Gestational age				
≥ 37 weeks	6	24	8	32
< 37 weeks	19	76	17	68

3.2. Baby weight corresponding to the Kangaroo module and education

Table 2 showed that based on the average body weight before treatment in control and experimental group the infants were identified as the low birth weight (LBW) infants with a mean (± SD) of 2,100 ± 234.95 grams and 2,090 ± 236.02 grams, with significant difference after and before treatment of infant weight (p value =0.001). LBW is very susceptible to hypothermia and infection (Saifuddin, 2009). However, the data suggested that there was a significant growth of infants after one month leave the hospitals. The mean weight (± SD) in control group was 2,600 ± 371.15 grams whilst the infant weight in experimental group was 3,000 ± 689.11 grams (mean ± SD). It indicated that Kangaroo outfits which provided to the respondents may also contribute to the significant increase of infant weight one month after leave hospital. Compare to the infant weight after one month leave hospital, we can highlight a significant elaboration of weight reached to 400 grams, at 0.001 difference level, if the mother obtained Kangaroo outfit with complete module and education. Table 2 shows experiences to Kangaroo clothes at home and let the baby with her in the pocket during the first month after leave hospital increase the independency of mothers. At the control group who obtain Kangaroo outfits without more knowledge related to the breastfeeding the score of mother independency increased significantly (p value < 0.001) from 15 ± 0.42 to 16 ± 0.53. Mothers who experience to Kangaroo outfit accompanied with more knowledge related to the breastfeeding will recognize the more benefits of that outfits. As the results, the score of mother independency increase dramatically from 15 ± 1.4 to 20 ± 1.53

Table 2. The infant weight and the score of mother independency before and after Kangaroo Mother Care Module and Education among the observed groups

Groups	Infant weight		*p* value	Score of mother independency		*p* value
	Range	Mean ± SD		Range	Mean ± SD	
Control (N=25)						
Pre-test	1,200 – 2,400	2,100 ± 234.95	< 0.001	13-18	15 ± 0.42	< 0.001
Post-test	1,690 – 3,700	2,600 ± 371.15		13-19	16 ± 0.53	
Treatment (N=25)						
Pre-test	1,600 – 2,400	2,090 ± 236.02	< 0.001	13-19	15 ± 1.4	< 0.001
Post-test	2,150 – 5,000	3,000 ± 689.11		16-22	20 ± 1.53	

3.3. Mother independency corresponding to the Kangaroo module and education

We acknowledge that score of mother independency one week after leave hospital was on the average of 15, ranged 13-19.. As shown in Table 3, the module and education of KMC accompanied with the uses of Kangaroo outfits delivers significant independency to the mothers who just leave hospital for one month, at 0.001 difference level and baby weight among treatment and control group at 0.001 different level, too.

Table 3. The significant difference of infant weight and score of mother independency (*p* value) before and after Kangaroo Mother Care Module and Education among the observed groups

Groups	Control	
	Pre-test	Post-test
Treatment		
Infant weight		
*Pretest	0,335	-
* Post-test	-	< 0,001
Score of mother independency		
*Pretest	0.194	-
* Post-test	-	< 0,001

Mothers are given education and modules tend to be more independent in doing kangaroo care method. Mother independency is the state of a person who can stand alone , grow and thrive because of the discipline and commitment so that it can determine yourself which is expressed in actions and behavior can be assessed. Suradi and Piprim (2009) states that the kangaroo outfit can enhance the emotional relationship of mother- baby, stabilize the body temperature, heart rate and breathing, and promote growth and weight of the infant as well. We found that health education through Kangaroo Mother Care increase significantly to the infant weight and mother independency. Notoatmodjo (2007) suggested that health education goals will be delivered easier with the use of appropriate visual and aids. Kangaroo Mother Care module and education related to the sense of mothers and their responsibility to her baby and easy to do other activity at home with her baby. KMC mothers' knowledge of the low at the beginning, with a given intervention KMC mothers trained in hospital and at home mom so more steadily doing KMC (Wobil& Yakubu, 201).

4. CONCLUSIONS AND RECOMMENDATIONS

The data highlights mother experiences to Kangaroo outfit significantly contribute to an increasing of infant weight and mother independency. Moreover the significantly enhancement to those two parameter was observed when mothers also obtain model and education related to the Kangaroo Mother Care.

ACKNOWLEDGEMENT

This reasearch can be done by suport from unit of reaseacrh and public perpetuation Semarang Health Polteknik

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